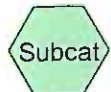
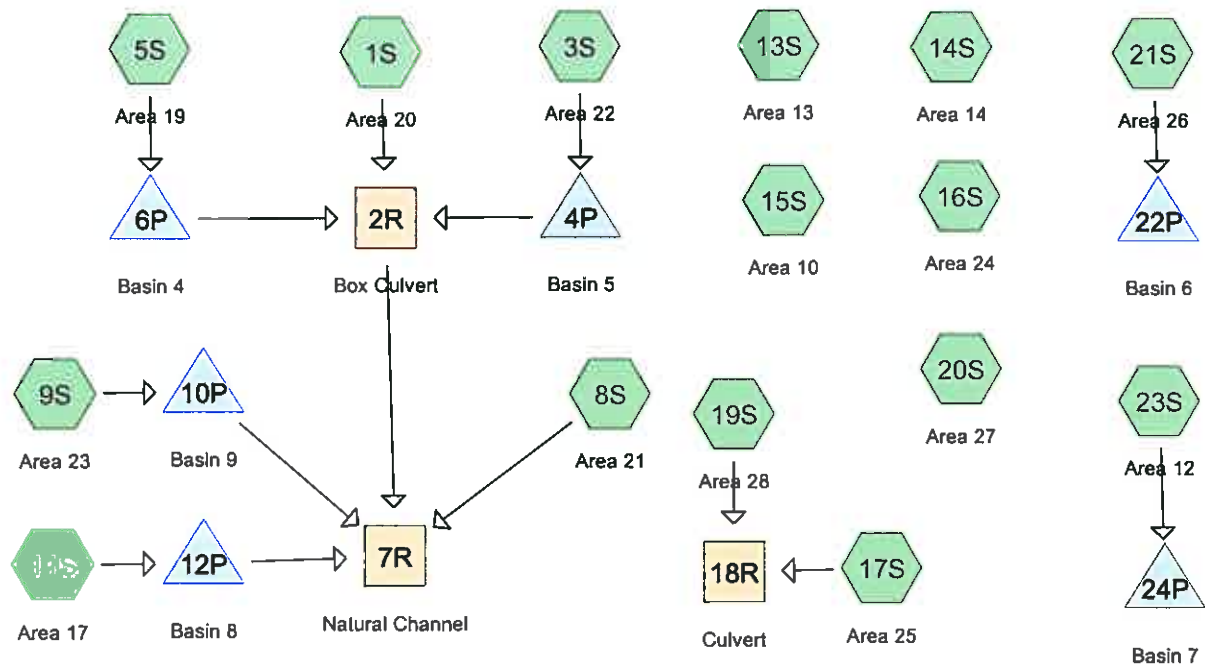


RETREAT AT  
AMHERST  
SOUTHERLY  
PORTION OF THE  
PROJECT



Routing Diagram for g1746 Retreat at Amherst Developed Conditions-Southern Portion of the Project  
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**Area Listing (all nodes)**

| Area<br>(acres) | CN        | Description<br>(subcatchment-numbers)   |
|-----------------|-----------|---|
| 3.320           | 30        | Brush, Good, HSG A (1S, 8S, 13S, 14S, 15S, 16S, 17S)                          |
| 57.950          | 30        | Woods, Good, HSG A (1S, 8S, 11S, 13S, 14S, 15S, 16S, 17S, 19S, 20S, 21S, 23S) |
| 2.580           | 35        | Easement (15S)  |
| 17.510          | 39        | >75% Grass cover, Good, HSG A (3S, 5S, 9S, 11S, 21S, 23S)                     |
| 0.990           | 48        | Brush, Good, HSG B (1S, 8S)   |
| 6.360           | 55        | Woods, Good, HSG B (1S, 8S)   |
| 2.990           | 61        | >75% Grass cover, Good, HSG B (3S, 9S)  |
| 2.500           | 98        | Paved parking, HSG A (1S, 3S, 5S, 9S, 11S, 21S, 23S)                          |
| 0.320           | 98        | Paved parking, HSG B (3S, 9S)   |
| 3.300           | 98        | Paved roads w/curbs & sewers, HSG A (3S, 5S, 9S, 11S, 21S, 23S)               |
| 0.350           | 98        | Paved roads w/curbs & sewers, HSG B (3S, 9S)                                  |
| 1.810           | 98        | Roofs, HSG A (3S, 5S, 9S, 11S, 21S, 23S)                                      |
| 0.310           | 98        | Roofs, HSG B (3S, 9S)   |
| <b>100.290</b>  | <b>40</b> | <b>TOTAL AREA</b>   |

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## **Soil Listing (all nodes)**

| Area<br>(acres) | Soil<br>Group | Subcatchment<br>Numbers  |
|-----------------|---------------|--|
| 86.390          | HSG A         | 1S, 3S, 5S, 8S, 9S, 11S, 13S, 14S, 15S, 16S, 17S, 19S, 20S, 21S, 23S |
| 11.320          | HSG B         | 1S, 3S, 8S, 9S   |
| 0.000           | HSG C         |  |
| 0.000           | HSG D         |  |
| 2.580           | Other         | 15S  |
| <b>100.290</b>  |               | <b>TOTAL AREA</b>  |

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**Ground Covers (all nodes)**

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover              | Subcatchmer<br>Numbers                                      |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------------|---|
| 17.510           | 2.990            | 0.000            | 0.000            | 0.000            | 20.500           | >75% Grass cover, Good       | 3S,<br>5S,<br>9S,<br>11<br>S,<br>21<br>S,<br>23<br>S        |
| 0.000            | 0.000            | 0.000            | 0.000            | 2.580            | 2.580            | Easement                     | 15<br>S   |
| 2.500            | 0.320            | 0.000            | 0.000            | 0.000            | 2.820            | Paved parking                | 1S,<br>3S,<br>5S,<br>9S,<br>11<br>S,<br>21<br>S,<br>23<br>S |
| 1.810            | 0.310            | 0.000            | 0.000            | 0.000            | 2.120            | Roofs                        | 3S,<br>5S,<br>9S,<br>11<br>S,<br>21<br>S,<br>23<br>S        |
| 3.300            | 0.350            | 0.000            | 0.000            | 0.000            | 3.650            | Paved roads w/curbs & sewers | 3S,<br>5S,<br>9S,   |

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**Ground Covers (all nodes) (continued)**

| HSG-A<br>(acres) | HSG-B<br>(acres) | HSG-C<br>(acres) | HSG-D<br>(acres) | Other<br>(acres) | Total<br>(acres) | Ground<br>Cover | Subcatchmer<br>Numbers  |
|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|---|
| 3.320            | 0.990            | 0.000            | 0.000            | 0.000            | 4.310            | Brush, Good     | 1S,<br>8S,<br>13<br>S,<br>14<br>S,<br>15<br>S,<br>16<br>S,<br>17<br>S   |
| 57.950           | 6.360            | 0.000            | 0.000            | 0.000            | 64.310           | Woods, Good     | 1S,<br>8S,<br>11<br>S,<br>13<br>S,<br>14<br>S,<br>15<br>S,<br>16<br>S,<br>17<br>S,<br>19<br>S,<br>20<br>S,<br>21<br>S,<br>23<br>S |
| 86.390           | 11.320           | 0.000            | 0.000            | 2.580            | 100.290          | TOTAL AREA      |   |

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**Pipe Listing (all nodes)**

| Line# | Node<br>Number | In-Invert<br>(feet) | Out-Invert<br>(feet) | Length<br>(feet) | Slope<br>(ft/ft) | n     | Diam/Width<br>(inches) | Height<br>(inches) | Inside-Fill<br>(inches) |
|-------|----------------|---------------------|----------------------|------------------|------------------|-------|------------------------|--------------------|-------------------------|
| 1     | 2R             | 384.00              | 383.00               | 60.0             | 0.0167           | 0.013 | 96.0                   | 48.0               | 0.0                     |
| 2     | 18R            | 472.00              | 471.00               | 60.0             | 0.0167           | 0.013 | 24.0                   | 0.0                | 0.0                     |
| 3     | 4P             | 399.00              | 398.00               | 30.0             | 0.0333           | 0.013 | 12.0                   | 0.0                | 0.0                     |
| 4     | 6P             | 423.00              | 422.00               | 70.0             | 0.0143           | 0.013 | 12.0                   | 0.0                | 0.0                     |
| 5     | 10P            | 431.00              | 430.00               | 55.0             | 0.0182           | 0.013 | 12.0                   | 0.0                | 0.0                     |
| 6     | 12P            | 361.00              | 360.00               | 40.0             | 0.0250           | 0.013 | 12.0                   | 0.0                | 0.0                     |
| 7     | 24P            | 306.00              | 304.30               | 168.0            | 0.0101           | 0.013 | 12.0                   | 0.0                | 0.0                     |

Time span=3.00-40.00 hrs, dt=0.05 hrs, 741 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

|  |   |
|--|---|
| <b>Subcatchment 1S: Area 20</b>  | Runoff Area=32.630 ac 0.43% Impervious Runoff Depth=0.00"       |
| Flow Length=3,450'   | Slope=0.0340 '/ Tc=164.3 min CN=33 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 3S: Area 22</b>  | Runoff Area=5.540 ac 31.59% Impervious Runoff Depth=0.51"       |
| Flow Length=743'   | Slope=0.1000 '/ Tc=12.1 min CN=65 Runoff=1.94 cfs 0.234 af      |
| <b>Subcatchment 5S: Area 19</b>  | Runoff Area=5.380 ac 22.49% Impervious Runoff Depth=0.13"       |
| Flow Length=700'   | Slope=0.0900 '/ Tc=16.9 min CN=52 Runoff=0.12 cfs 0.057 af      |
| <b>Subcatchment 8S: Area 21</b>  | Runoff Area=12.300 ac 0.00% Impervious Runoff Depth=0.00"       |
| Flow Length=800'   | Slope=0.0750 '/ Tc=30.6 min CN=37 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 9S: Area 23</b>  | Runoff Area=4.850 ac 34.43% Impervious Runoff Depth=0.51"       |
| Flow Length=1,100'   | Slope=0.0350 '/ Tc=27.9 min CN=65 Runoff=1.27 cfs 0.205 af      |
| <b>Subcatchment 11S: Area 17</b>                                       | Runoff Area=8.740 ac 20.14% Impervious Runoff Depth=0.07"       |
| Flow Length=1,100'   | Slope=0.0800 '/ Tc=27.7 min CN=49 Runoff=0.09 cfs 0.054 af      |
| <b>Subcatchment 13S: Area 13</b>                                       | Runoff Area=2.100 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=250'   | Slope=0.0400 '/ Tc=20.4 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 14S: Area 14</b>                                       | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=250'   | Slope=0.1200 '/ Tc=11.8 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 15S: Area 10</b>                                       | Runoff Area=13.190 ac 0.00% Impervious Runoff Depth=0.00"       |
| Flow Length=1,200'   | Slope=0.1000 '/ Tc=43.8 min CN=31 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 16S: Area 24</b>                                       | Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=350'   | Slope=0.0250 '/ Tc=33.7 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 17S: Area 25</b>                                       | Runoff Area=2.730 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=600'   | Slope=0.0330 '/ Tc=45.2 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 19S: Area 28</b>                                       | Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=360'   | Slope=0.0550 '/ Tc=23.3 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 20S: Area 27</b>                                       | Runoff Area=1.100 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=400'   | Slope=0.0250 '/ Tc=37.5 min CN=30 Runoff=0.00 cfs 0.000 af      |
| <b>Subcatchment 21S: Area 26</b>                                       | Runoff Area=3.020 ac 30.13% Impervious Runoff Depth=0.22"       |
| Flow Length=860'   | Slope=0.0200 '/ Tc=38.1 min CN=56 Runoff=0.17 cfs 0.055 af      |
| <b>Subcatchment 23S: Area 12</b>                                       | Runoff Area=4.260 ac 27.00% Impervious Runoff Depth=0.15"       |
| Flow Length=700'   | Slope=0.1000 '/ Tc=15.6 min CN=53 Runoff=0.14 cfs 0.053 af      |
| <b>Reach 2R: Box Culvert</b>   | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af |
| 96.0" x 48.0" Box Pipe n=0.013 L=60.0' S=0.0167 '/ Capacity=572.06 cfs | Outflow=0.00 cfs 0.000 af                                       |

**Reach 7R: Natural Channel** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
n=0.040 L=800.0' S=0.0725 '/' Capacity=169.95 cfs Outflow=0.00 cfs 0.000 af

**Reach 18R: Culvert** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
24.0" Round Pipe n=0.013 L=60.0' S=0.0167 '/' Capacity=29.21 cfs Outflow=0.00 cfs 0.000 af

**Pond 4P: Basin 5** Peak Elev=401.33' Storage=10,177 cf Inflow=1.94 cfs 0.234 af  
Outflow=0.00 cfs 0.000 af

**Pond 6P: Basin 4** Peak Elev=422.96' Storage=2,503 cf Inflow=0.12 cfs 0.057 af  
Outflow=0.00 cfs 0.000 af

**Pond 10P: Basin 9** Peak Elev=431.49' Storage=8,909 cf Inflow=1.27 cfs 0.205 af  
Outflow=0.00 cfs 0.000 af

**Pond 12P: Basin 8** Peak Elev=360.25' Storage=2,362 cf Inflow=0.09 cfs 0.054 af  
Outflow=0.00 cfs 0.000 af

**Pond 22P: Basin 6** Peak Elev=456.46' Storage=2,409 cf Inflow=0.17 cfs 0.055 af  
Outflow=0.00 cfs 0.000 af

**Pond 24P: Basin 7** Peak Elev=306.02' Storage=2,303 cf Inflow=0.14 cfs 0.053 af  
Outflow=0.00 cfs 0.000 af

**Total Runoff Area = 100.290 ac Runoff Volume = 0.658 af Average Runoff Depth = 0.08"**  
**91.43% Pervious = 91.700 ac 8.57% Impervious = 8.590 ac**



### Summary for Subcatchment 1S: Area 20

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.320     | 30 | Brush, Good, HSG A    |
| 0.440     | 48 | Brush, Good, HSG B    |
| 27.650    | 30 | Woods, Good, HSG A    |
| 3.080     | 55 | Woods, Good, HSG B    |
| 0.140     | 98 | Paved parking, HSG A  |
| 32.630    | 33 | Weighted Average      |
| 32.490    |    | 99.57% Pervious Area  |
| 0.140     |    | 0.43% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 164.3       | 3,450            | 0.0340           | 0.35                 |                   | Lag/CN Method, |

### Summary for Subcatchment 3S: Area 22

Runoff = 1.94 cfs @ 12.22 hrs, Volume= 0.234 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 2.000     | 39 | >75% Grass cover, Good, HSG A       |
| 1.790     | 61 | >75% Grass cover, Good, HSG B       |
| 0.400     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.290     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.330     | 98 | Paved parking, HSG A                |
| 0.200     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.190     | 98 | Roofs, HSG B                        |
| 5.540     | 65 | Weighted Average                    |
| 3.790     |    | 68.41% Pervious Area                |
| 1.750     |    | 31.59% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 12.1        | 743              | 0.1000           | 1.03                 |                   | Lag/CN Method, |

### Summary for Subcatchment 5S: Area 19

Runoff = 0.12 cfs @ 12.65 hrs, Volume= 0.057 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 4.170     | 39 | >75% Grass cover, Good, HSG A       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.480     | 98 | Paved parking, HSG A                |
| 0.050     | 98 | Roofs, HSG A                        |
| 5.380     | 52 | Weighted Average                    |
| 4.170     |    | 77.51% Pervious Area                |
| 1.210     |    | 22.49% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 16.9        | 700              | 0.0900           | 0.69                 |                   | Lag/CN Method, |

### Summary for Subcatchment 8S: Area 21

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.770     | 30 | Brush, Good, HSG A    |
| 0.550     | 48 | Brush, Good, HSG B    |
| 7.700     | 30 | Woods, Good, HSG A    |
| 3.280     | 55 | Woods, Good, HSG B    |
| 12.300    | 37 | Weighted Average      |
| 12.300    |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 30.6        | 800              | 0.0750           | 0.44                 |                   | Lag/CN Method, |

### Summary for Subcatchment 9S: Area 23

Runoff = 1.27 cfs @ 12.50 hrs, Volume= 0.205 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.980     | 39 | >75% Grass cover, Good, HSG A       |
| 1.200     | 61 | >75% Grass cover, Good, HSG B       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.060     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.350     | 98 | Paved parking, HSG A                |
| 0.120     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.120     | 98 | Roofs, HSG B                        |
| 4.850     | 65 | Weighted Average                    |
| 3.180     |    | 65.57% Pervious Area                |
| 1.670     |    | 34.43% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.9        | 1,100            | 0.0350           | 0.66                 |                   | Lag/CN Method, |

### Summary for Subcatchment 11S: Area 17

Runoff = 0.09 cfs @ 15.03 hrs, Volume= 0.054 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 5.060     | 39 | >75% Grass cover, Good, HSG A       |
| 0.660     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.590     | 98 | Paved parking, HSG A                |
| 0.510     | 98 | Roofs, HSG A                        |
| 1.920     | 30 | Woods, Good, HSG A                  |
| 8.740     | 49 | Weighted Average                    |
| 6.980     |    | 79.86% Pervious Area                |
| 1.760     |    | 20.14% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.7        | 1,100            | 0.0800           | 0.66                 |                   | Lag/CN Method, |

### Summary for Subcatchment 13S: Area 13

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.200     | 30 | Brush, Good, HSG A    |
| 1.900     | 30 | Woods, Good, HSG A    |
| 2.100     | 30 | Weighted Average      |
| 2.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 20.4        | 250              | 0.0400           | 0.20                 |                   | Lag/CN Method, |

### Summary for Subcatchment 14S: Area 14

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.140     | 30 | Brush, Good, HSG A    |
| 0.330     | 30 | Woods, Good, HSG A    |
| 0.470     | 30 | Weighted Average      |
| 0.470     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 11.8        | 250              | 0.1200           | 0.35                 |                   | Lag/CN Method, |



### Summary for Subcatchment 15S: Area 10

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.490     | 30 | Brush, Good, HSG A    |
| * 2.580   | 35 | Easement              |
| 10.120    | 30 | Woods, Good, HSG A    |
| 13.190    | 31 | Weighted Average      |
| 13.190    |    | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description    |
|----------|---------------|---------------|-------------------|----------------|----------------|
| 43.8     | 1,200         | 0.1000        | 0.46              |                | Lag/CN Method, |

### Summary for Subcatchment 16S: Area 24

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.180     | 30 | Brush, Good, HSG A    |
| 0.790     | 30 | Woods, Good, HSG A    |
| 0.970     | 30 | Weighted Average      |
| 0.970     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 33.7        | 350              | 0.0250           | 0.17                 |                   | Lag/CN Method, |

### Summary for Subcatchment 17S: Area 25

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.220     | 30 | Brush, Good, HSG A    |
| 2.510     | 30 | Woods, Good, HSG A    |
| 2.730     | 30 | Weighted Average      |
| 2.730     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 45.2        | 600              | 0.0330           | 0.22                 |                   | Lag/CN Method, |

### Summary for Subcatchment 19S: Area 28

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 3.010     | 30 | Woods, Good, HSG A    |
| 3.010     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 23.3        | 360              | 0.0550           | 0.26                 |                   | Lag/CN Method, |

### Summary for Subcatchment 20S: Area 27

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.100     | 30 | Woods, Good, HSG A    |
| 1.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 37.5        | 400              | 0.0250           | 0.18                 |                   | Lag/CN Method, |

### Summary for Subcatchment 21S: Area 26

Runoff = 0.17 cfs @ 12.83 hrs, Volume= 0.055 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.960     | 39 | >75% Grass cover, Good, HSG A       |
| 0.490     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.210     | 98 | Paved parking, HSG A                |
| 0.210     | 98 | Roofs, HSG A                        |
| 0.150     | 30 | Woods, Good, HSG A                  |
| 3.020     | 56 | Weighted Average                    |
| 2.110     |    | 69.87% Pervious Area                |
| 0.910     |    | 30.13% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 38.1        | 860              | 0.0200           | 0.38                 |                   | Lag/CN Method, |

### Summary for Subcatchment 23S: Area 12

Runoff = 0.14 cfs @ 12.57 hrs, Volume= 0.053 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 2-Year Rainfall=3.00"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.770     | 30 | Woods, Good, HSG A                  |
| 2.340     | 39 | >75% Grass cover, Good, HSG A       |
| 0.390     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.400     | 98 | Paved parking, HSG A                |
| 0.360     | 98 | Roofs, HSG A                        |
| 4.260     | 53 | Weighted Average                    |
| 3.110     |    | 73.00% Pervious Area                |
| 1.150     |    | 27.00% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 15.6        | 700              | 0.1000           | 0.75                 |                   | Lag/CN Method, |

### Summary for Reach 2R: Box Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 43.550 ac, 7.12% Impervious, Inflow Depth = 0.00" for 2-Year event  
Inflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 3.00 hrs  
Average Depth at Peak Storage= 0.00'  
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 572.06 cfs

96.0" W x 48.0" H Box Pipe  
n= 0.013  
Length= 60.0' Slope= 0.0167 '/'  
Inlet Invert= 384.00', Outlet Invert= 383.00'





### Summary for Reach 7R: Natural Channel

[81] Warning: Exceeded Pond 12P by 23.00' @ 3.00 hrs

Inflow Area = 69.440 ac, 9.40% Impervious, Inflow Depth = 0.00" for 2-Year event  
Inflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 3.00 hrs  
Average Depth at Peak Storage= 0.00'  
Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 169.95 cfs

6.00' x 2.00' deep channel, n= 0.040  
Side Slope Z-value= 0.5 '/' Top Width= 8.00'  
Length= 800.0' Slope= 0.0725 '/'  
Inlet Invert= 383.00', Outlet Invert= 325.00'



### Summary for Reach 18R: Culvert

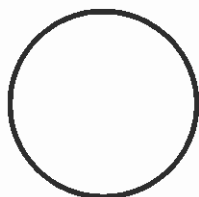
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 5.740 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event  
Inflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 3.00 hrs  
Average Depth at Peak Storage= 0.00'  
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 29.21 cfs

24.0" Round Pipe  
n= 0.013  
Length= 60.0' Slope= 0.0167 '/'  
Inlet Invert= 472.00', Outlet Invert= 471.00'



### Summary for Pond 4P: Basin 5

Inflow Area = 5.540 ac, 31.59% Impervious, Inflow Depth = 0.51" for 2-Year event  
 Inflow = 1.94 cfs @ 12.22 hrs, Volume= 0.234 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 401.33' @ 24.75 hrs Surf.Area= 8,208 sf Storage= 10,177 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 400.00' | 57,900 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 400.00              | 7,055                | 0                         | 0                         |
| 406.00              | 12,245               | 57,900                    | 57,900                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 405.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 399.00' | <b>12.0" Round Culvert</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 404.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=400.00' (Free Discharge)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert (Passes 0.00 cfs of 2.67 cfs potential flow)  
 3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 6P: Basin 4

Inflow Area = 5.380 ac, 22.49% Impervious, Inflow Depth = 0.13" for 2-Year event  
 Inflow = 0.12 cfs @ 12.65 hrs, Volume= 0.057 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 422.96' @ 25.00 hrs Surf.Area= 2,969 sf Storage= 2,503 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage             | Storage Description  |
|---------------------|----------------------|---------------------------|--|
| #1                  | 422.00'              | 67,816 cf                 | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet)                                  |
| 422.00              | 2,265                | 0                         | 0  |
| 424.00              | 3,738                | 6,003                     | 6,003  |
| 426.00              | 5,515                | 9,253                     | 15,256   |
| 428.00              | 7,545                | 13,060                    | 28,316   |
| 430.00              | 9,815                | 17,360                    | 45,676   |
| 432.00              | 12,325               | 22,140                    | 67,816   |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 431.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 423.00' | <b>12.0" Round Culvert</b> L= 70.0' Ke= 0.500<br>Inlet / Outlet Invert= 423.00' / 422.00' S= 0.0143 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 430.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=422.00' (Free Discharge)

↑ 1=**Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

↑ 2=**Culvert** ( Controls 0.00 cfs)

↑ 3=**Orifice/Grate** ( Controls 0.00 cfs)

### Summary for Pond 10P: Basin 9

Inflow Area = 4.850 ac, 34.43% Impervious, Inflow Depth = 0.51" for 2-Year event  
 Inflow = 1.27 cfs @ 12.50 hrs, Volume= 0.205 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 431.49' @ 25.65 hrs Surf.Area= 7,016 sf Storage= 8,909 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 430.00' | 88,950 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 430.00              | 4,910                | 0                         | 0                         |
| 432.00              | 7,730                | 12,640                    | 12,640                    |
| 434.00              | 10,890               | 18,620                    | 31,260                    |
| 436.00              | 14,365               | 25,255                    | 56,515                    |
| 438.00              | 18,070               | 32,435                    | 88,950                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 437.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 431.00' | <b>12.0" Round Culvert</b> L= 55.0' Ke= 0.500<br>Inlet / Outlet Invert= 431.00' / 430.00' S= 0.0182 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 436.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=430.00' (Free Discharge)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

2=Culvert ( Controls 0.00 cfs)

3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 12P: Basin 8

Inflow Area = 8.740 ac, 20.14% Impervious, Inflow Depth = 0.07" for 2-Year event  
 Inflow = 0.09 cfs @ 15.03 hrs, Volume= 0.054 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 360.25' @ 25.60 hrs Surf.Area= 9,706 sf Storage= 2,362 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 360.00' | 68,700 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 360.00              | 9,260                | 0                         | 0                         |
| 365.00              | 18,220               | 68,700                    | 68,700                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 364.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 361.00' | <b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 361.00' / 360.00' S= 0.0250 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 363.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=360.00' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert ( Controls 0.00 cfs)  
 3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 22P: Basin 6

Inflow Area = 3.020 ac, 30.13% Impervious, Inflow Depth = 0.22" for 2-Year event  
 Inflow = 0.17 cfs @ 12.83 hrs, Volume= 0.055 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 456.46' @ 26.20 hrs Surf.Area= 5,674 sf Storage= 2,409 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 456.00' | 63,000 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 456.00              | 4,800                | 0                         | 0                         |
| 462.00              | 16,200               | 63,000                    | 63,000                    |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 461.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Primary OutFlow Max=0.00 cfs @ 3.00 hrs HW=456.00' (Free Discharge)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Summary for Pond 24P: Basin 7

Inflow Area = 4.260 ac, 27.00% Impervious, Inflow Depth = 0.15" for 2-Year event  
 Inflow = 0.14 cfs @ 12.57 hrs, Volume= 0.053 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 306.02' @ 24.95 hrs Surf.Area= 2,821 sf Storage= 2,303 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage             | Storage Description  |
|---------------------|----------------------|---------------------------|--|
| #1                  | 305.00'              | 63,392 cf                 | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet)                                  |
| 305.00              | 1,690                | 0                         | 0  |
| 306.00              | 2,798                | 2,244                     | 2,244  |
| 308.00              | 5,005                | 7,803                     | 10,047   |
| 310.00              | 7,465                | 12,470                    | 22,517   |
| 312.00              | 10,160               | 17,625                    | 40,142   |
| 314.00              | 13,090               | 23,250                    | 63,392   |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 313.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 306.00' | <b>12.0" Round Culvert</b> L= 168.0' Ke= 0.500<br>Inlet / Outlet Invert= 306.00' / 304.30' S= 0.0101 ' /' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                |
| #3     | Device 2 | 312.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=305.00' (Free Discharge)

- 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)
- 2=Culvert ( Controls 0.00 cfs)
- 3=Orifice/Grate ( Controls 0.00 cfs)



Time span=3.00-40.00 hrs, dt=0.05 hrs, 741 points  
 Runoff by SCS TR-20 method, UH=SCS  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Area 20</b>                     | Runoff Area=32.630 ac 0.43% Impervious Runoff Depth=0.01"       |
| Flow Length=3,450'                                  | Slope=0.0340 '/' Tc=164.3 min CN=33 Runoff=0.05 cfs 0.025 af    |
| <b>Subcatchment 3S: Area 22</b>                     | Runoff Area=5.540 ac 31.59% Impervious Runoff Depth=1.33"       |
| Flow Length=743'                                    | Slope=0.1000 '/' Tc=12.1 min CN=65 Runoff=6.44 cfs 0.614 af     |
| <b>Subcatchment 5S: Area 19</b>                     | Runoff Area=5.380 ac 22.49% Impervious Runoff Depth=0.59"       |
| Flow Length=700'                                    | Slope=0.0900 '/' Tc=16.9 min CN=52 Runoff=1.67 cfs 0.266 af     |
| <b>Subcatchment 8S: Area 21</b>                     | Runoff Area=12.300 ac 0.00% Impervious Runoff Depth=0.07"       |
| Flow Length=800'                                    | Slope=0.0750 '/' Tc=30.6 min CN=37 Runoff=0.10 cfs 0.068 af     |
| <b>Subcatchment 9S: Area 23</b>                     | Runoff Area=4.850 ac 34.43% Impervious Runoff Depth=1.33"       |
| Flow Length=1,100'                                  | Slope=0.0350 '/' Tc=27.9 min CN=65 Runoff=4.08 cfs 0.538 af     |
| <b>Subcatchment 11S: Area 17</b>                    | Runoff Area=8.740 ac 20.14% Impervious Runoff Depth=0.46"       |
| Flow Length=1,100'                                  | Slope=0.0800 '/' Tc=27.7 min CN=49 Runoff=1.51 cfs 0.332 af     |
| <b>Subcatchment 13S: Area 13</b>                    | Runoff Area=2.100 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=250'                                    | Slope=0.0400 '/' Tc=20.4 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 14S: Area 14</b>                    | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=250'                                    | Slope=0.1200 '/' Tc=11.8 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 15S: Area 10</b>                    | Runoff Area=13.190 ac 0.00% Impervious Runoff Depth=0.00"       |
| Flow Length=1,200'                                  | Slope=0.1000 '/' Tc=43.8 min CN=31 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 16S: Area 24</b>                    | Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=350'                                    | Slope=0.0250 '/' Tc=33.7 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 17S: Area 25</b>                    | Runoff Area=2.730 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=600'                                    | Slope=0.0330 '/' Tc=45.2 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 19S: Area 28</b>                    | Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=360'                                    | Slope=0.0550 '/' Tc=23.3 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 20S: Area 27</b>                    | Runoff Area=1.100 ac 0.00% Impervious Runoff Depth=0.00"        |
| Flow Length=400'                                    | Slope=0.0250 '/' Tc=37.5 min CN=30 Runoff=0.00 cfs 0.000 af     |
| <b>Subcatchment 21S: Area 26</b>                    | Runoff Area=3.020 ac 30.13% Impervious Runoff Depth=0.80"       |
| Flow Length=860'                                    | Slope=0.0200 '/' Tc=38.1 min CN=56 Runoff=1.10 cfs 0.200 af     |
| <b>Subcatchment 23S: Area 12</b>                    | Runoff Area=4.260 ac 27.00% Impervious Runoff Depth=0.64"       |
| Flow Length=700'                                    | Slope=0.1000 '/' Tc=15.6 min CN=53 Runoff=1.54 cfs 0.228 af     |
| <b>Reach 2R: Box Culvert</b>                        | Avg. Flow Depth=0.00' Max Vel=1.71 fps Inflow=0.05 cfs 0.025 af |
| 96.0" x 48.0" Box Pipe n=0.013 L=60.0' S=0.0167 '/' | Capacity=572.06 cfs Outflow=0.05 cfs 0.025 af                   |

**g1746 Retreat at Amherst Developed Conditions-Sout Type III 24-hr 10-Year Rainfall=4.50"**

Prepared by {enter your company name here}

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**Reach 7R: Natural Channel** Avg. Flow Depth=0.02' Max Vel=0.82 fps Inflow=0.11 cfs 0.093 af  
n=0.040 L=800.0' S=0.0725 '/' Capacity=169.95 cfs Outflow=0.11 cfs 0.093 af

**Reach 18R: Culvert** Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af  
24.0" Round Pipe n=0.013 L=60.0' S=0.0167 '/' Capacity=29.21 cfs Outflow=0.00 cfs 0.000 af

**Pond 4P: Basin 5** Peak Elev=403.17' Storage=26,754 cf Inflow=6.44 cfs 0.614 af  
Outflow=0.00 cfs 0.000 af

**Pond 6P: Basin 4** Peak Elev=425.29' Storage=11,573 cf Inflow=1.67 cfs 0.266 af  
Outflow=0.00 cfs 0.000 af

**Pond 10P: Basin 9** Peak Elev=433.24' Storage=23,421 cf Inflow=4.08 cfs 0.538 af  
Outflow=0.00 cfs 0.000 af

**Pond 12P: Basin 8** Peak Elev=361.38' Storage=14,466 cf Inflow=1.51 cfs 0.332 af  
Outflow=0.00 cfs 0.000 af

**Pond 22P: Basin 6** Peak Elev=457.42' Storage=8,716 cf Inflow=1.10 cfs 0.200 af  
Outflow=0.00 cfs 0.000 af

**Pond 24P: Basin 7** Peak Elev=307.97' Storage=9,914 cf Inflow=1.54 cfs 0.228 af  
Outflow=0.00 cfs 0.000 af

**Total Runoff Area = 100.290 ac Runoff Volume = 2.271 af Average Runoff Depth = 0.27"**  
**91.43% Pervious = 91.700 ac 8.57% Impervious = 8.590 ac**

### Summary for Subcatchment 1S: Area 20

Runoff = 0.05 cfs @ 24.49 hrs, Volume= 0.025 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.320     | 30 | Brush, Good, HSG A    |
| 0.440     | 48 | Brush, Good, HSG B    |
| 27.650    | 30 | Woods, Good, HSG A    |
| 3.080     | 55 | Woods, Good, HSG B    |
| 0.140     | 98 | Paved parking, HSG A  |
| 32.630    | 33 | Weighted Average      |
| 32.490    |    | 99.57% Pervious Area  |
| 0.140     |    | 0.43% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 164.3       | 3,450            | 0.0340           | 0.35                 |                   | Lag/CN Method, |

### Summary for Subcatchment 3S: Area 22

Runoff = 6.44 cfs @ 12.19 hrs, Volume= 0.614 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 2.000     | 39 | >75% Grass cover, Good, HSG A       |
| 1.790     | 61 | >75% Grass cover, Good, HSG B       |
| 0.400     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.290     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.330     | 98 | Paved parking, HSG A                |
| 0.200     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.190     | 98 | Roofs, HSG B                        |
| 5.540     | 65 | Weighted Average                    |
| 3.790     |    | 68.41% Pervious Area                |
| 1.750     |    | 31.59% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 12.1        | 743              | 0.1000           | 1.03                 |                   | Lag/CN Method, |

**Summary for Subcatchment 5S: Area 19**

Runoff = 1.67 cfs @ 12.36 hrs, Volume= 0.266 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 4.170     | 39 | >75% Grass cover, Good, HSG A       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.480     | 98 | Paved parking, HSG A                |
| 0.050     | 98 | Roofs, HSG A                        |
| 5.380     | 52 | Weighted Average                    |
| 4.170     |    | 77.51% Pervious Area                |
| 1.210     |    | 22.49% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 16.9        | 700              | 0.0900           | 0.69                 |                   | Lag/CN Method, |

### Summary for Subcatchment 8S: Area 21

Runoff = 0.10 cfs @ 15.66 hrs, Volume= 0.068 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.770     | 30 | Brush, Good, HSG A    |
| 0.550     | 48 | Brush, Good, HSG B    |
| 7.700     | 30 | Woods, Good, HSG A    |
| 3.280     | 55 | Woods, Good, HSG B    |
| 12.300    | 37 | Weighted Average      |
| 12.300    |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 30.6        | 800              | 0.0750           | 0.44                 |                   | Lag/CN Method, |

### Summary for Subcatchment 9S: Area 23

Runoff = 4.08 cfs @ 12.43 hrs, Volume= 0.538 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.980     | 39 | >75% Grass cover, Good, HSG A       |
| 1.200     | 61 | >75% Grass cover, Good, HSG B       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.060     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.350     | 98 | Paved parking, HSG A                |
| 0.120     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.120     | 98 | Roofs, HSG B                        |
| 4.850     | 65 | Weighted Average                    |
| 3.180     |    | 65.57% Pervious Area                |
| 1.670     |    | 34.43% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.9        | 1,100            | 0.0350           | 0.66                 |                   | Lag/CN Method, |

### Summary for Subcatchment 11S: Area 17

Runoff = 1.51 cfs @ 12.60 hrs, Volume= 0.332 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 5.060     | 39 | >75% Grass cover, Good, HSG A       |
| 0.660     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.590     | 98 | Paved parking, HSG A                |
| 0.510     | 98 | Roofs, HSG A                        |
| 1.920     | 30 | Woods, Good, HSG A                  |
| 8.740     | 49 | Weighted Average                    |
| 6.980     |    | 79.86% Pervious Area                |
| 1.760     |    | 20.14% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.7        | 1,100            | 0.0800           | 0.66                 |                   | Lag/CN Method, |



### Summary for Subcatchment 13S: Area 13

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.200     | 30 | Brush, Good, HSG A    |
| 1.900     | 30 | Woods, Good, HSG A    |
| 2.100     | 30 | Weighted Average      |
| 2.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 20.4        | 250              | 0.0400           | 0.20                 |                   | Lag/CN Method, |

### Summary for Subcatchment 14S: Area 14

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.140     | 30 | Brush, Good, HSG A    |
| 0.330     | 30 | Woods, Good, HSG A    |
| 0.470     | 30 | Weighted Average      |
| 0.470     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 11.8        | 250              | 0.1200           | 0.35                 |                   | Lag/CN Method, |

### Summary for Subcatchment 15S: Area 10

Runoff = 0.00 cfs @ 24.29 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.490     | 30 | Brush, Good, HSG A    |
| * 2.580   | 35 | Easement              |
| 10.120    | 30 | Woods, Good, HSG A    |
| 13.190    | 31 | Weighted Average      |
| 13.190    |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 43.8        | 1,200            | 0.1000           | 0.46                 |                   | Lag/CN Method, |

### Summary for Subcatchment 16S: Area 24

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.180     | 30 | Brush, Good, HSG A    |
| 0.790     | 30 | Woods, Good, HSG A    |
| 0.970     | 30 | Weighted Average      |
| 0.970     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 33.7        | 350              | 0.0250           | 0.17                 |                   | Lag/CN Method, |

### Summary for Subcatchment 17S: Area 25

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.220     | 30 | Brush, Good, HSG A    |
| 2.510     | 30 | Woods, Good, HSG A    |
| 2.730     | 30 | Weighted Average      |
| 2.730     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 45.2        | 600              | 0.0330           | 0.22                 |                   | Lag/CN Method, |

### Summary for Subcatchment 19S: Area 28

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 3.010     | 30 | Woods, Good, HSG A    |
| 3.010     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 23.3        | 360              | 0.0550           | 0.26                 |                   | Lag/CN Method, |

### Summary for Subcatchment 20S: Area 27

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.100     | 30 | Woods, Good, HSG A    |
| 1.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 37.5        | 400              | 0.0250           | 0.18                 |                   | Lag/CN Method, |

### Summary for Subcatchment 21S: Area 26

Runoff = 1.10 cfs @ 12.64 hrs, Volume= 0.200 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.960     | 39 | >75% Grass cover, Good, HSG A       |
| 0.490     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.210     | 98 | Paved parking, HSG A                |
| 0.210     | 98 | Roofs, HSG A                        |
| 0.150     | 30 | Woods, Good, HSG A                  |
| 3.020     | 56 | Weighted Average                    |
| 2.110     |    | 69.87% Pervious Area                |
| 0.910     |    | 30.13% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 38.1        | 860              | 0.0200           | 0.38                 |                   | Lag/CN Method, |



### Summary for Subcatchment 23S: Area 12

Runoff = 1.54 cfs @ 12.31 hrs, Volume= 0.228 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 10-Year Rainfall=4.50"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.770     | 30 | Woods, Good, HSG A                  |
| 2.340     | 39 | >75% Grass cover, Good, HSG A       |
| 0.390     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.400     | 98 | Paved parking, HSG A                |
| 0.360     | 98 | Roofs, HSG A                        |
| 4.260     | 53 | Weighted Average                    |
| 3.110     |    | 73.00% Pervious Area                |
| 1.150     |    | 27.00% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 15.6        | 700              | 0.1000           | 0.75                 |                   | Lag/CN Method, |

### Summary for Reach 2R: Box Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 43.550 ac, 7.12% Impervious, Inflow Depth = 0.01" for 10-Year event  
Inflow = 0.05 cfs @ 24.49 hrs, Volume= 0.025 af  
Outflow = 0.05 cfs @ 24.52 hrs, Volume= 0.025 af, Atten= 0%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 1.71 fps, Min. Travel Time= 0.6 min  
Avg. Velocity = 1.71 fps, Avg. Travel Time= 0.6 min

Peak Storage= 2 cf @ 24.50 hrs  
Average Depth at Peak Storage= 0.00'  
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 572.06 cfs

96.0" W x 48.0" H Box Pipe  
n= 0.013  
Length= 60.0' Slope= 0.0167 '/'  
Inlet Invert= 384.00', Outlet Invert= 383.00'



### Summary for Reach 7R: Natural Channel

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.02' @ 15.80 hrs

[81] Warning: Exceeded Pond 12P by 23.00' @ 3.00 hrs

Inflow Area = 69.440 ac, 9.40% Impervious, Inflow Depth = 0.02" for 10-Year event  
Inflow = 0.11 cfs @ 23.21 hrs, Volume= 0.093 af  
Outflow = 0.11 cfs @ 23.66 hrs, Volume= 0.093 af, Atten= 0%, Lag= 27.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.82 fps, Min. Travel Time= 16.3 min

Avg. Velocity = 0.75 fps, Avg. Travel Time= 17.7 min

Peak Storage= 107 cf @ 23.39 hrs

Average Depth at Peak Storage= 0.02'

Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 169.95 cfs

6.00' x 2.00' deep channel, n= 0.040

Side Slope Z-value= 0.5 '/' Top Width= 8.00'

Length= 800.0' Slope= 0.0725 '/'

Inlet Invert= 383.00', Outlet Invert= 325.00'



### Summary for Reach 18R: Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 5.740 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event  
Inflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af  
Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min

Avg. Velocity= 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 3.00 hrs

Average Depth at Peak Storage= 0.00'

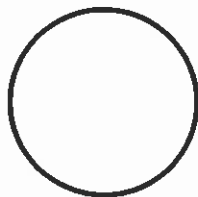
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 29.21 cfs

24.0" Round Pipe

n= 0.013

Length= 60.0' Slope= 0.0167 '/'

Inlet Invert= 472.00', Outlet Invert= 471.00'



### Summary for Pond 4P: Basin 5

Inflow Area = 5.540 ac, 31.59% Impervious, Inflow Depth = 1.33" for 10-Year event  
 Inflow = 6.44 cfs @ 12.19 hrs, Volume= 0.614 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 403.17' @ 24.75 hrs Surf.Area= 9,801 sf Storage= 26,754 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 400.00' | 57,900 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 400.00              | 7,055                | 0                         | 0                         |
| 406.00              | 12,245               | 57,900                    | 57,900                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 405.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 399.00' | <b>12.0" Round Culvert</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 404.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=400.00' (Free Discharge)

↑ 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 ↑ 2=Culvert (Passes 0.00 cfs of 2.67 cfs potential flow)  
 ↑ 3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 6P: Basin 4

Inflow Area = 5.380 ac, 22.49% Impervious, Inflow Depth = 0.59" for 10-Year event  
 Inflow = 1.67 cfs @ 12.36 hrs, Volume= 0.266 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 425.29' @ 25.00 hrs Surf.Area= 4,886 sf Storage= 11,573 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage             | Storage Description  |
|---------------------|----------------------|---------------------------|--|
| #1                  | 422.00'              | 67,816 cf                 | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet)                                  |
| 422.00              | 2,265                | 0                         | 0  |
| 424.00              | 3,738                | 6,003                     | 6,003  |
| 426.00              | 5,515                | 9,253                     | 15,256   |
| 428.00              | 7,545                | 13,060                    | 28,316   |
| 430.00              | 9,815                | 17,360                    | 45,676   |
| 432.00              | 12,325               | 22,140                    | 67,816   |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 431.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 423.00' | <b>12.0" Round Culvert</b> L= 70.0' Ke= 0.500<br>Inlet / Outlet Invert= 423.00' / 422.00' S= 0.0143 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 430.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=422.00' (Free Discharge)

- ↑ 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 2=Culvert ( Controls 0.00 cfs)
- ↑ 3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 10P: Basin 9

Inflow Area = 4.850 ac, 34.43% Impervious, Inflow Depth = 1.33" for 10-Year event  
 Inflow = 4.08 cfs @ 12.43 hrs, Volume= 0.538 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 433.24' @ 25.65 hrs Surf.Area= 9,686 sf Storage= 23,421 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 430.00' | 88,950 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 430.00              | 4,910                | 0                         | 0                         |
| 432.00              | 7,730                | 12,640                    | 12,640                    |
| 434.00              | 10,890               | 18,620                    | 31,260                    |
| 436.00              | 14,365               | 25,255                    | 56,515                    |
| 438.00              | 18,070               | 32,435                    | 88,950                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 437.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 431.00' | <b>12.0" Round Culvert</b> L= 55.0' Ke= 0.500<br>Inlet / Outlet Invert= 431.00' / 430.00' S= 0.0182 ' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                    |
| #3     | Device 2 | 436.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=430.00' (Free Discharge)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

2=Culvert ( Controls 0.00 cfs)

3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 12P: Basin 8

Inflow Area = 8.740 ac, 20.14% Impervious, Inflow Depth = 0.46" for 10-Year event  
 Inflow = 1.51 cfs @ 12.60 hrs, Volume= 0.332 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 361.38' @ 25.60 hrs Surf.Area= 11,730 sf Storage= 14,466 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 360.00' | 68,700 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 360.00              | 9,260                | 0                         | 0                         |
| 365.00              | 18,220               | 68,700                    | 68,700                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 364.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 361.00' | <b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 361.00' / 360.00' S= 0.0250 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 363.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=360.00' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert ( Controls 0.00 cfs)  
 3=Orifice/Grate ( Controls 0.00 cfs)



### Summary for Pond 22P: Basin 6

Inflow Area = 3.020 ac, 30.13% Impervious, Inflow Depth = 0.80" for 10-Year event  
 Inflow = 1.10 cfs @ 12.64 hrs, Volume= 0.200 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 457.42' @ 26.20 hrs Surf.Area= 7,494 sf Storage= 8,716 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 456.00' | 63,000 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 456.00              | 4,800                | 0                         | 0                         |
| 462.00              | 16,200               | 63,000                    | 63,000                    |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 461.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Primary OutFlow Max=0.00 cfs @ 3.00 hrs HW=456.00' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Summary for Pond 24P: Basin 7

Inflow Area = 4.260 ac, 27.00% Impervious, Inflow Depth = 0.64" for 10-Year event  
 Inflow = 1.54 cfs @ 12.31 hrs, Volume= 0.228 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 307.97' @ 24.95 hrs Surf.Area= 4,976 sf Storage= 9,914 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 305.00' | 63,392 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 305.00              | 1,690                | 0                         | 0                         |
| 306.00              | 2,798                | 2,244                     | 2,244                     |
| 308.00              | 5,005                | 7,803                     | 10,047                    |
| 310.00              | 7,465                | 12,470                    | 22,517                    |
| 312.00              | 10,160               | 17,625                    | 40,142                    |
| 314.00              | 13,090               | 23,250                    | 63,392                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 313.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 306.00' | <b>12.0" Round Culvert</b> L= 168.0' Ke= 0.500<br>Inlet / Outlet Invert= 306.00' / 304.30' S= 0.0101 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                 |
| #3     | Device 2 | 312.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=305.00' (Free Discharge)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

2=Culvert ( Controls 0.00 cfs)

3=Orifice/Grate ( Controls 0.00 cfs)

Time span=3.00-40.00 hrs, dt=0.05 hrs, 741 points  
 Runoff by SCS TR-20 method, UH=SCS  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

|   |   |
|---|---|
| <b>Subcatchment 1S: Area 20</b>                     | Runoff Area=32.630 ac 0.43% Impervious Runoff Depth=0.24"       |
| Flow Length=3,450'                                  | Slope=0.0340 '/' Tc=164.3 min CN=33 Runoff=0.95 cfs 0.657 af    |
| <b>Subcatchment 3S: Area 22</b>                     | Runoff Area=5.540 ac 31.59% Impervious Runoff Depth=2.65"       |
| Flow Length=743'                                    | Slope=0.1000 '/' Tc=12.1 min CN=65 Runoff=13.61 cfs 1.222 af    |
| <b>Subcatchment 5S: Area 19</b>                     | Runoff Area=5.380 ac 22.49% Impervious Runoff Depth=1.50"       |
| Flow Length=700'                                    | Slope=0.0900 '/' Tc=16.9 min CN=52 Runoff=5.86 cfs 0.674 af     |
| <b>Subcatchment 8S: Area 21</b>                     | Runoff Area=12.300 ac 0.00% Impervious Runoff Depth=0.45"       |
| Flow Length=800'                                    | Slope=0.0750 '/' Tc=30.6 min CN=37 Runoff=1.48 cfs 0.459 af     |
| <b>Subcatchment 9S: Area 23</b>                     | Runoff Area=4.850 ac 34.43% Impervious Runoff Depth=2.65"       |
| Flow Length=1,100'                                  | Slope=0.0350 '/' Tc=27.9 min CN=65 Runoff=8.61 cfs 1.070 af     |
| <b>Subcatchment 11S: Area 17</b>                    | Runoff Area=8.740 ac 20.14% Impervious Runoff Depth=1.27"       |
| Flow Length=1,100'                                  | Slope=0.0800 '/' Tc=27.7 min CN=49 Runoff=6.17 cfs 0.922 af     |
| <b>Subcatchment 13S: Area 13</b>                    | Runoff Area=2.100 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=250'                                    | Slope=0.0400 '/' Tc=20.4 min CN=30 Runoff=0.03 cfs 0.021 af     |
| <b>Subcatchment 14S: Area 14</b>                    | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=250'                                    | Slope=0.1200 '/' Tc=11.8 min CN=30 Runoff=0.01 cfs 0.005 af     |
| <b>Subcatchment 15S: Area 10</b>                    | Runoff Area=13.190 ac 0.00% Impervious Runoff Depth=0.16"       |
| Flow Length=1,200'                                  | Slope=0.1000 '/' Tc=43.8 min CN=31 Runoff=0.27 cfs 0.172 af     |
| <b>Subcatchment 16S: Area 24</b>                    | Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=350'                                    | Slope=0.0250 '/' Tc=33.7 min CN=30 Runoff=0.02 cfs 0.010 af     |
| <b>Subcatchment 17S: Area 25</b>                    | Runoff Area=2.730 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=600'                                    | Slope=0.0330 '/' Tc=45.2 min CN=30 Runoff=0.04 cfs 0.027 af     |
| <b>Subcatchment 19S: Area 28</b>                    | Runoff Area=3.010 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=360'                                    | Slope=0.0550 '/' Tc=23.3 min CN=30 Runoff=0.05 cfs 0.030 af     |
| <b>Subcatchment 20S: Area 27</b>                    | Runoff Area=1.100 ac 0.00% Impervious Runoff Depth=0.12"        |
| Flow Length=400'                                    | Slope=0.0250 '/' Tc=37.5 min CN=30 Runoff=0.02 cfs 0.011 af     |
| <b>Subcatchment 21S: Area 26</b>                    | Runoff Area=3.020 ac 30.13% Impervious Runoff Depth=1.84"       |
| Flow Length=860'                                    | Slope=0.0200 '/' Tc=38.1 min CN=56 Runoff=3.02 cfs 0.463 af     |
| <b>Subcatchment 23S: Area 12</b>                    | Runoff Area=4.260 ac 27.00% Impervious Runoff Depth=1.59"       |
| Flow Length=700'                                    | Slope=0.1000 '/' Tc=15.6 min CN=53 Runoff=5.12 cfs 0.563 af     |
| <b>Reach 2R: Box Culvert</b>                        | Avg. Flow Depth=0.08' Max Vel=2.73 fps Inflow=1.77 cfs 1.072 af |
| 96.0" x 48.0" Box Pipe n=0.013 L=60.0' S=0.0167 '/' | Capacity=572.06 cfs Outflow=1.77 cfs 1.072 af                   |

**Reach 7R: Natural Channel** Avg. Flow Depth=0.15' Max Vel=2.71 fps Inflow=2.41 cfs 1.631 af  
 n=0.040 L=800.0' S=0.0725 '/' Capacity=169.95 cfs Outflow=2.41 cfs 1.631 af

**Reach 18R: Culvert** Avg. Flow Depth=0.08' Max Vel=2.08 fps Inflow=0.09 cfs 0.057 af  
 24.0" Round Pipe n=0.013 L=60.0' S=0.0167 '/' Capacity=29.21 cfs Outflow=0.09 cfs 0.057 af

**Pond 4P: Basin 5** Peak Elev=404.11' Storage=36,339 cf Inflow=13.61 cfs 1.222 af  
 Outflow=1.03 cfs 0.415 af

**Pond 6P: Basin 4** Peak Elev=428.14' Storage=29,379 cf Inflow=5.86 cfs 0.674 af  
 Outflow=0.00 cfs 0.000 af

**Pond 10P: Basin 9** Peak Elev=435.28' Storage=46,588 cf Inflow=8.61 cfs 1.070 af  
 Outflow=0.00 cfs 0.000 af

**Pond 12P: Basin 8** Peak Elev=363.05' Storage=36,588 cf Inflow=6.17 cfs 0.922 af  
 Outflow=0.30 cfs 0.099 af

**Pond 22P: Basin 6** Peak Elev=458.73' Storage=20,147 cf Inflow=3.02 cfs 0.463 af  
 Outflow=0.00 cfs 0.000 af

**Pond 24P: Basin 7** Peak Elev=310.26' Storage=24,526 cf Inflow=5.12 cfs 0.563 af  
 Outflow=0.00 cfs 0.000 af

**Total Runoff Area = 100.290 ac Runoff Volume = 6.306 af Average Runoff Depth = 0.75"**  
**91.43% Pervious = 91.700 ac 8.57% Impervious = 8.590 ac**

### Summary for Subcatchment 1S: Area 20

Runoff = 0.95 cfs @ 16.60 hrs, Volume= 0.657 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.320     | 30 | Brush, Good, HSG A    |
| 0.440     | 48 | Brush, Good, HSG B    |
| 27.650    | 30 | Woods, Good, HSG A    |
| 3.080     | 55 | Woods, Good, HSG B    |
| 0.140     | 98 | Paved parking, HSG A  |
| 32.630    | 33 | Weighted Average      |
| 32.490    |    | 99.57% Pervious Area  |
| 0.140     |    | 0.43% Impervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 164.3       | 3,450            | 0.0340           | 0.35                 |                   | Lag/CN Method, |

### Summary for Subcatchment 3S: Area 22

Runoff = 13.61 cfs @ 12.18 hrs, Volume= 1.222 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 2.000     | 39 | >75% Grass cover, Good, HSG A       |
| 1.790     | 61 | >75% Grass cover, Good, HSG B       |
| 0.400     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.290     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.330     | 98 | Paved parking, HSG A                |
| 0.200     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.190     | 98 | Roofs, HSG B                        |
| 5.540     | 65 | Weighted Average                    |
| 3.790     |    | 68.41% Pervious Area                |
| 1.750     |    | 31.59% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 12.1        | 743              | 0.1000           | 1.03                 |                   | Lag/CN Method, |

### Summary for Subcatchment 5S: Area 19

Runoff = 5.86 cfs @ 12.27 hrs, Volume= 0.674 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 4.170     | 39 | >75% Grass cover, Good, HSG A       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.480     | 98 | Paved parking, HSG A                |
| 0.050     | 98 | Roofs, HSG A                        |
| 5.380     | 52 | Weighted Average                    |
| 4.170     |    | 77.51% Pervious Area                |
| 1.210     |    | 22.49% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 16.9        | 700              | 0.0900           | 0.69                 |                   | Lag/CN Method, |

### Summary for Subcatchment 8S: Area 21

Runoff = 1.48 cfs @ 12.72 hrs, Volume= 0.459 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.770     | 30 | Brush, Good, HSG A    |
| 0.550     | 48 | Brush, Good, HSG B    |
| 7.700     | 30 | Woods, Good, HSG A    |
| 3.280     | 55 | Woods, Good, HSG B    |
| 12.300    | 37 | Weighted Average      |
| 12.300    |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 30.6        | 800              | 0.0750           | 0.44                 |                   | Lag/CN Method, |



### Summary for Subcatchment 9S: Area 23

Runoff = 8.61 cfs @ 12.41 hrs, Volume= 1.070 af, Depth= 2.65"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.980     | 39 | >75% Grass cover, Good, HSG A       |
| 1.200     | 61 | >75% Grass cover, Good, HSG B       |
| 0.680     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.060     | 98 | Paved roads w/curbs & sewers, HSG B |
| 0.350     | 98 | Paved parking, HSG A                |
| 0.120     | 98 | Paved parking, HSG B                |
| 0.340     | 98 | Roofs, HSG A                        |
| 0.120     | 98 | Roofs, HSG B                        |
| 4.850     | 65 | Weighted Average                    |
| 3.180     |    | 65.57% Pervious Area                |
| 1.670     |    | 34.43% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.9        | 1,100            | 0.0350           | 0.66                 |                   | Lag/CN Method, |

### Summary for Subcatchment 11S: Area 17

Runoff = 6.17 cfs @ 12.47 hrs, Volume= 0.922 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 5.060     | 39 | >75% Grass cover, Good, HSG A       |
| 0.660     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.590     | 98 | Paved parking, HSG A                |
| 0.510     | 98 | Roofs, HSG A                        |
| 1.920     | 30 | Woods, Good, HSG A                  |
| 8.740     | 49 | Weighted Average                    |
| 6.980     |    | 79.86% Pervious Area                |
| 1.760     |    | 20.14% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 27.7        | 1,100            | 0.0800           | 0.66                 |                   | Lag/CN Method, |

### Summary for Subcatchment 13S: Area 13

Runoff = 0.03 cfs @ 15.24 hrs, Volume= 0.021 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.200     | 30 | Brush, Good, HSG A    |
| 1.900     | 30 | Woods, Good, HSG A    |
| 2.100     | 30 | Weighted Average      |
| 2.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 20.4        | 250              | 0.0400           | 0.20                 |                   | Lag/CN Method, |

### Summary for Subcatchment 14S: Area 14

Runoff = 0.01 cfs @ 15.10 hrs, Volume= 0.005 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.140     | 30 | Brush, Good, HSG A    |
| 0.330     | 30 | Woods, Good, HSG A    |
| 0.470     | 30 | Weighted Average      |
| 0.470     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 11.8        | 250              | 0.1200           | 0.35                 |                   | Lag/CN Method, |

**Summary for Subcatchment 15S: Area 10**

Runoff = 0.27 cfs @ 15.26 hrs, Volume= 0.172 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN            | Description           |                   |                |                |
|-----------|---------------|-----------------------|-------------------|----------------|----------------|
| 0.490     | 30            | Brush, Good, HSG A    |                   |                |                |
| * 2.580   | 35            | Easement              |                   |                |                |
| 10.120    | 30            | Woods, Good, HSG A    |                   |                |                |
| 13.190    | 31            | Weighted Average      |                   |                |                |
| 13.190    |               | 100.00% Pervious Area |                   |                |                |
| Tc (min)  | Length (feet) | Slope (ft/ft)         | Velocity (ft/sec) | Capacity (cfs) | Description    |
| 43.8      | 1,200         | 0.1000                | 0.46              |                | Lag/CN Method, |

### Summary for Subcatchment 16S: Area 24

Runoff = 0.02 cfs @ 15.44 hrs, Volume= 0.010 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.180     | 30 | Brush, Good, HSG A    |
| 0.790     | 30 | Woods, Good, HSG A    |
| 0.970     | 30 | Weighted Average      |
| 0.970     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 33.7        | 350              | 0.0250           | 0.17                 |                   | Lag/CN Method, |

### Summary for Subcatchment 17S: Area 25

Runoff = 0.04 cfs @ 15.62 hrs, Volume= 0.027 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 0.220     | 30 | Brush, Good, HSG A    |
| 2.510     | 30 | Woods, Good, HSG A    |
| 2.730     | 30 | Weighted Average      |
| 2.730     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 45.2        | 600              | 0.0330           | 0.22                 |                   | Lag/CN Method, |

### Summary for Subcatchment 19S: Area 28

Runoff = 0.05 cfs @ 15.29 hrs, Volume= 0.030 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 3.010     | 30 | Woods, Good, HSG A    |
| 3.010     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 23.3        | 360              | 0.0550           | 0.26                 |                   | Lag/CN Method, |



### Summary for Subcatchment 20S: Area 27

Runoff = 0.02 cfs @ 15.54 hrs, Volume= 0.011 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description           |
|-----------|----|-----------------------|
| 1.100     | 30 | Woods, Good, HSG A    |
| 1.100     |    | 100.00% Pervious Area |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 37.5        | 400              | 0.0250           | 0.18                 |                   | Lag/CN Method, |

### Summary for Subcatchment 21S: Area 26

Runoff = 3.02 cfs @ 12.58 hrs, Volume= 0.463 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 1.960     | 39 | >75% Grass cover, Good, HSG A       |
| 0.490     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.210     | 98 | Paved parking, HSG A                |
| 0.210     | 98 | Roofs, HSG A                        |
| 0.150     | 30 | Woods, Good, HSG A                  |
| 3.020     | 56 | Weighted Average                    |
| 2.110     |    | 69.87% Pervious Area                |
| 0.910     |    | 30.13% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 38.1        | 860              | 0.0200           | 0.38                 |                   | Lag/CN Method, |

### Summary for Subcatchment 23S: Area 12

Runoff = 5.12 cfs @ 12.25 hrs, Volume= 0.563 af, Depth= 1.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Type III 24-hr 100-Year Rainfall=6.40"

| Area (ac) | CN | Description                         |
|-----------|----|-------------------------------------|
| 0.770     | 30 | Woods, Good, HSG A                  |
| 2.340     | 39 | >75% Grass cover, Good, HSG A       |
| 0.390     | 98 | Paved roads w/curbs & sewers, HSG A |
| 0.400     | 98 | Paved parking, HSG A                |
| 0.360     | 98 | Roofs, HSG A                        |
| 4.260     | 53 | Weighted Average                    |
| 3.110     |    | 73.00% Pervious Area                |
| 1.150     |    | 27.00% Impervious Area              |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description    |
|-------------|------------------|------------------|----------------------|-------------------|----------------|
| 15.6        | 700              | 0.1000           | 0.75                 |                   | Lag/CN Method, |

### Summary for Reach 2R: Box Culvert

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 43.550 ac, 7.12% Impervious, Inflow Depth = 0.30" for 100-Year event  
Inflow = 1.77 cfs @ 15.34 hrs, Volume= 1.072 af  
Outflow = 1.77 cfs @ 15.35 hrs, Volume= 1.072 af, Atten= 0%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.73 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 2.03 fps, Avg. Travel Time= 0.5 min

Peak Storage= 39 cf @ 15.34 hrs  
Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 4.00' Flow Area= 32.0 sf, Capacity= 572.06 cfs

96.0" W x 48.0" H Box Pipe  
n= 0.013  
Length= 60.0' Slope= 0.0167 '  
Inlet Invert= 384.00', Outlet Invert= 383.00'



### Summary for Reach 7R: Natural Channel

[62] Hint: Exceeded Reach 2R OUTLET depth by 0.11' @ 12.80 hrs

[81] Warning: Exceeded Pond 12P by 23.00' @ 3.00 hrs

Inflow Area = 69.440 ac, 9.40% Impervious, Inflow Depth = 0.28" for 100-Year event  
Inflow = 2.41 cfs @ 15.15 hrs, Volume= 1.631 af  
Outflow = 2.41 cfs @ 15.27 hrs, Volume= 1.631 af, Atten= 0%, Lag= 7.6 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs

Max. Velocity= 2.71 fps, Min. Travel Time= 4.9 min

Avg. Velocity = 1.67 fps, Avg. Travel Time= 8.0 min

Peak Storage= 711 cf @ 15.19 hrs

Average Depth at Peak Storage= 0.15'

Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 169.95 cfs

6.00' x 2.00' deep channel, n= 0.040

Side Slope Z-value= 0.5 '/' Top Width= 8.00'

Length= 800.0' Slope= 0.0725 '/'

Inlet Invert= 383.00', Outlet Invert= 325.00'



### Summary for Reach 18R: Culvert

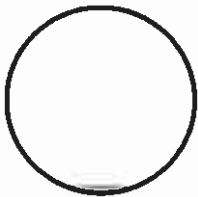
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 5.740 ac, 0.00% Impervious, Inflow Depth = 0.12" for 100-Year event  
Inflow = 0.09 cfs @ 15.46 hrs, Volume= 0.057 af  
Outflow = 0.09 cfs @ 15.47 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.08 fps, Min. Travel Time= 0.5 min  
Avg. Velocity = 1.71 fps, Avg. Travel Time= 0.6 min

Peak Storage= 3 cf @ 15.46 hrs  
Average Depth at Peak Storage= 0.08'  
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 29.21 cfs

24.0" Round Pipe  
n= 0.013  
Length= 60.0' Slope= 0.0167 '/'  
Inlet Invert= 472.00', Outlet Invert= 471.00'



### Summary for Pond 4P: Basin 5

Inflow Area = 5.540 ac, 31.59% Impervious, Inflow Depth = 2.65" for 100-Year event  
 Inflow = 13.61 cfs @ 12.18 hrs, Volume= 1.222 af  
 Outflow = 1.03 cfs @ 14.83 hrs, Volume= 0.415 af, Atten= 92%, Lag= 159.5 min  
 Primary = 1.03 cfs @ 14.83 hrs, Volume= 0.415 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 404.11' @ 14.83 hrs Surf.Area= 10,613 sf Storage= 36,339 cf

Plug-Flow detention time= 364.5 min calculated for 0.414 af (34% of inflow)  
 Center-of-Mass det. time= 232.4 min ( 1,084.7 - 852.3 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 400.00' | 57,900 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 400.00              | 7,055                | 0                         | 0                         |
| 406.00              | 12,245               | 57,900                    | 57,900                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 405.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 399.00' | <b>12.0" Round Culvert</b> L= 30.0' Ke= 0.500<br>Inlet / Outlet Invert= 399.00' / 398.00' S= 0.0333 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 404.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=1.00 cfs @ 14.83 hrs HW=404.11' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert (Passes 1.00 cfs of 8.12 cfs potential flow)  
 3=Orifice/Grate (Weir Controls 1.00 cfs @ 1.10 fps)

### Summary for Pond 6P: Basin 4

Inflow Area = 5.380 ac, 22.49% Impervious, Inflow Depth = 1.50" for 100-Year event  
 Inflow = 5.86 cfs @ 12.27 hrs, Volume= 0.674 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 428.14' @ 25.00 hrs Surf.Area= 7,703 sf Storage= 29,379 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 422.00' | 67,816 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 422.00              | 2,265                | 0                         | 0                         |
| 424.00              | 3,738                | 6,003                     | 6,003                     |
| 426.00              | 5,515                | 9,253                     | 15,256                    |
| 428.00              | 7,545                | 13,060                    | 28,316                    |
| 430.00              | 9,815                | 17,360                    | 45,676                    |
| 432.00              | 12,325               | 22,140                    | 67,816                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 431.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 423.00' | <b>12.0" Round Culvert</b> L= 70.0' Ke= 0.500<br>Inlet / Outlet Invert= 423.00' / 422.00' S= 0.0143 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 430.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=422.00' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert ( Controls 0.00 cfs)  
 3=Orifice/Grate ( Controls 0.00 cfs)



### Summary for Pond 10P: Basin 9

Inflow Area = 4.850 ac, 34.43% Impervious, Inflow Depth = 2.65" for 100-Year event  
 Inflow = 8.61 cfs @ 12.41 hrs, Volume= 1.070 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 435.28' @ 25.65 hrs Surf.Area= 13,109 sf Storage= 46,588 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 430.00' | 88,950 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 430.00              | 4,910                | 0                         | 0                         |
| 432.00              | 7,730                | 12,640                    | 12,640                    |
| 434.00              | 10,890               | 18,620                    | 31,260                    |
| 436.00              | 14,365               | 25,255                    | 56,515                    |
| 438.00              | 18,070               | 32,435                    | 88,950                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 437.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 431.00' | <b>12.0" Round Culvert</b> L= 55.0' Ke= 0.500<br>Inlet / Outlet Invert= 431.00' / 430.00' S= 0.0182 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                  |
| #3     | Device 2 | 436.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=430.00' (Free Discharge)

1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert ( Controls 0.00 cfs)  
 3=Orifice/Grate ( Controls 0.00 cfs)

### Summary for Pond 12P: Basin 8

Inflow Area = 8.740 ac, 20.14% Impervious, Inflow Depth = 1.27" for 100-Year event  
 Inflow = 6.17 cfs @ 12.47 hrs, Volume= 0.922 af  
 Outflow = 0.30 cfs @ 22.38 hrs, Volume= 0.099 af, Atten= 95%, Lag= 594.7 min  
 Primary = 0.30 cfs @ 22.38 hrs, Volume= 0.099 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 363.05' @ 22.38 hrs Surf.Area= 14,727 sf Storage= 36,588 cf

Plug-Flow detention time= 642.3 min calculated for 0.099 af (11% of inflow)  
 Center-of-Mass det. time= 466.9 min ( 1,379.1 - 912.2 )

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 360.00' | 68,700 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 360.00              | 9,260                | 0                         | 0                         |
| 365.00              | 18,220               | 68,700                    | 68,700                    |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 364.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 361.00' | <b>12.0" Round Culvert</b> L= 40.0' Ke= 0.500<br>Inlet / Outlet Invert= 361.00' / 360.00' S= 0.0250 ' /' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                 |
| #3     | Device 2 | 363.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.30 cfs @ 22.38 hrs HW=363.05' (Free Discharge)  
 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 2=Culvert (Passes 0.30 cfs of 4.71 cfs potential flow)  
 3=Orifice/Grate (Weir Controls 0.30 cfs @ 0.74 fps)

### Summary for Pond 22P: Basin 6

Inflow Area = 3.020 ac, 30.13% Impervious, Inflow Depth = 1.84" for 100-Year event  
 Inflow = 3.02 cfs @ 12.58 hrs, Volume= 0.463 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 458.73' @ 26.20 hrs Surf.Area= 9,980 sf Storage= 20,147 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert  | Avail.Storage | Storage Description  |
|--------|---------|---------------|--|
| #1     | 456.00' | 63,000 cf     | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 456.00              | 4,800                | 0                         | 0                         |
| 462.00              | 16,200               | 63,000                    | 63,000                    |

| Device | Routing | Invert  | Outlet Devices   |
|--------|---------|---------|--|
| #1     | Primary | 461.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=456.00' (Free Discharge)  
 ↑1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Summary for Pond 24P: Basin 7

Inflow Area = 4.260 ac, 27.00% Impervious, Inflow Depth = 1.59" for 100-Year event  
 Inflow = 5.12 cfs @ 12.25 hrs, Volume= 0.563 af  
 Outflow = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min  
 Primary = 0.00 cfs @ 3.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 3.00-40.00 hrs, dt= 0.05 hrs  
 Peak Elev= 310.26' @ 24.95 hrs Surf.Area= 7,819 sf Storage= 24,526 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)  
 Center-of-Mass det. time= (not calculated: no outflow)

| Volume              | Invert               | Avail.Storage             | Storage Description  |
|---------------------|----------------------|---------------------------|--|
| #1                  | 305.00'              | 63,392 cf                 | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc) |
| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet)                                  |
| 305.00              | 1,690                | 0                         | 0  |
| 306.00              | 2,798                | 2,244                     | 2,244  |
| 308.00              | 5,005                | 7,803                     | 10,047   |
| 310.00              | 7,465                | 12,470                    | 22,517   |
| 312.00              | 10,160               | 17,625                    | 40,142   |
| 314.00              | 13,090               | 23,250                    | 63,392   |

| Device | Routing  | Invert  | Outlet Devices   |
|--------|----------|---------|--|
| #1     | Primary  | 313.00' | <b>10.0' long x 10.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2     | Primary  | 306.00' | <b>12.0" Round Culvert</b> L= 168.0' Ke= 0.500<br>Inlet / Outlet Invert= 306.00' / 304.30' S= 0.0101 '/' Cc= 0.900<br>n= 0.013, Flow Area= 0.79 sf                                 |
| #3     | Device 2 | 312.00' | <b>24.0" x 24.0" Horiz. Orifice/Grate</b> C= 0.600<br>Limited to weir flow at low heads  |

**Primary OutFlow** Max=0.00 cfs @ 3.00 hrs HW=305.00' (Free Discharge)

- ↑ 1=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)
- ↑ 2=Culvert ( Controls 0.00 cfs)
- ↑ 3=Orifice/Grate ( Controls 0.00 cfs)